LAKE: DUCKPUDDLE P (VLMP 15)
TOWN: NOBLEBORO
COUNTY: LINCOLN

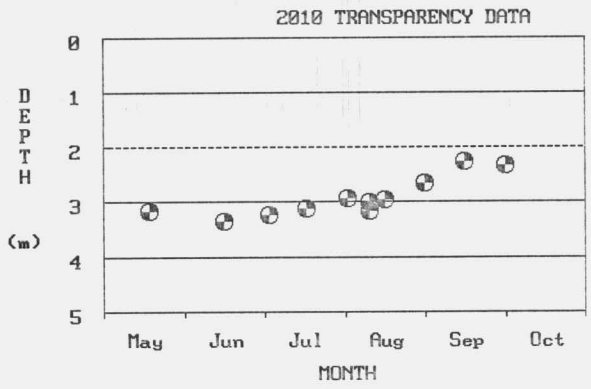
MIDAS: 5702
TRUE BASIN: 1
SAMPLE STATION: 1

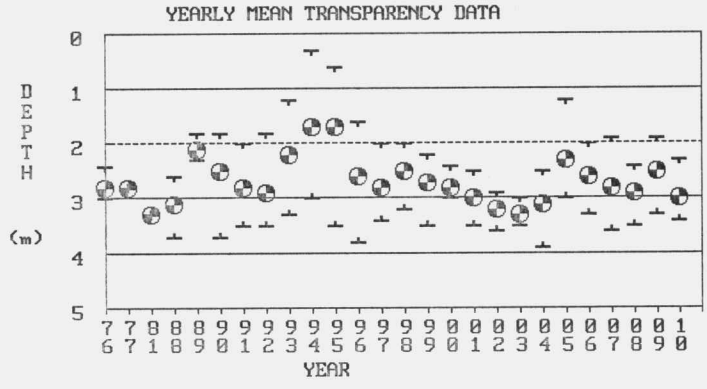
WHOLE LAKE INFORMATION
MAX. DEPTH: 7 m. (23 ft.)
MEAN DEPTH: 5 m. (16 ft.)
DELORME ATLAS #: 13
USGS QUAD: WALDOBORO WEST
IFW REGION B: Belgrade Lakes (Augusta)
IFW FISH. MANAGMENT: Warmwater

TRUE BASIN CHARACTERISTICS
SURFACE AREA: 98.0 ha. (242.2 a.)
FLUSHING RATE: 3.10 flushes/yr.
VOLUME: 4273973.0 cu. m. (3467 ac.-ft.)
DIRECT DRAINAGE AREA: 20.15 sq. km. (7.78 sq. mi.)

PLEASE NOTE THE FOLLOWING: The SAMPLE STATION # refers to the location sampled. The term TRUE BASIN is used to define areas within a lake that are separated by shallow reefs or shoals and therefore function as separate lakes. There are approximately 50 lakes in the state that have more than 1 True Basin. True Basin Characteristics are now being included in the first section of these reports to enable users of the Phosphorous Loading Methodology to better evaluate the data. If there is no data for a particular True Basin, True Basin Characteristics must be obtained from the DEP. DUCKPUDDLE P has 1 True Basin(s).

SECCHI DISK TRANSPARENCY GRAPHS:





Note: 2010 graphs may indicate multiple readings taken on a given day.

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

[* indicates that Secchi disk was visable at bottom of lake (or one reading used in calculation was visable)].

	MEAN	MEAN	MEAN	MEAN	TOTAL PHOS. MEANS (ppb)				SECCHI DISK (m.)				CHLOROPHYLL A(ppb)			TROPHIC STATE INDICES			
	COLOR	pH	ALK	COND.	EPI	SURF	BOT.	PRO.								EPI PHOS			
YEAR	(SPU)		(mg/l)	(uS /cm)	CORE	GRAB	GRAB	GRAB	MIN.	MEAN	MAX.	N	MIN.	MEAN	MAX.	C	G	SEC	CHL
1976	-	-	-	-	-	-	-	-	2.4	2.8	3.0	2	-	-	-	-	-	-	-
1977	70	6.10	7.0	59	-	-	-	17	2.8	2.8	2.8	1	6.2	6.2	6.2	-	-	-	-
1981	65	6.60	11.0	39	17	-	-	-	3.3	3.3	3.3	1	6.4	6.4	6.4	-	-	-	-
1988	-	-	-	-	-	-	-	-	2.6	3.1	3.7	5	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	1.8	2.1	2.3	7	-	-	-	-	-	-	-
1990	70	6.86	12.5	49	17	-	-	-	1.8	2.5	3.7	7	8.0	8.0	8.0	-	-	-	-
1991	-	-	-	-	-	-	-	-	2.0	2.8	3.5	6	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	1.8	2.9	3.5	6	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	1.2	2.2	3.3	6	-	-	-	-	-	-	-
1994	55	-	3.0	-	29	-	-	-	0.3	1.7	3.0	5	17.9	17.9	17.9	-	-	-	-
1995	-	-	-	-	-	-	-	-	0.6	1.7	3.5	6	-	-	-	-	-	-	-
1996	65	-	-	-	-	-	-	-	1.6	2.6	3.8	6	-	-	-	-	-	-	-
1997	-	-	-	-	-	-	-	-	2.0	2.8	3.4	5	-	-	-	-	-	-	-
1998	70	-	7.0	51	22	-	30	-	2.0	2.5*	3.2	6	14.0	14.0	14.0	-	-	-	-
1999	-	-	-	-	-	-	-	-	2.2	2.7*	3.5	5	-	-	-	-	-	-	-

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MIDAS: 5702
*TRUE BASIN: 1
*SAMPLE STATION: 1

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

	MEAN COLOR (SPU)	MEAN pH	MEAN ALK (mg/l)	MEAN COND. (uS /cm)	TOTAL PHOS. MEANS (ppb) EPI CORE	SURF GRAB	BOT. GRAB	PRO. GRAB	SECCHI DISK (m.) MIN.	MEAN	MAX.	N	CHLOROPHYLL A(ppb) MIN.	MEAN	MAX.	TROPHIC STATE INDICES EPI PHOS C	G	SEC	CHL
YEAR																			
2000	44	-	9.0	64	25	-	24	26	2.4	2.8	3.0	4	5.0	6.9	7.7	-	-	-	-
2001	44	7.02	7.1	59	18	-	23	20	2.5	3.0	3.5	4	6.8	9.3	11.2	-	-	-	-
2002	43	-	11.3	68	19	-	109	17	2.9	3.2	3.6	5	5.6	7.5	11.0	-	-	-	64
2003	47	-	-	-	10	-	11	-	3.0	3.3	3.5	4	17.0	17.0	17.0	-	-	-	-
2004	61	6.59	-	-	18	-	-	17	2.5	3.1	3.9	6	4.2	7.9	12.5	-	-	-	65
2005	92	7.21	8.8	53	17	-	37	-	1.2	2.3	3.0	5	32.0	32.0	32.0	-	-	-	-
2006	93	6.99	9.4	51	20	-	22	-	2.0	2.6	3.3	6	18.0	18.0	18.0	-	-	-	-
2007	-	-	-	-	-	-	-	-	1.9	2.8	3.6	6	-	-	-	-	-	-	-
2008	62	6.78	8.0	51	17	-	32	-	2.4	2.9	3.5	6	12.0	12.0	12.0	-	-	-	-
2009	-	-	-	-	-	-	-	-	1.9	2.5	3.3	6	-	-	-	-	-	-	-
2010	-	-	-	-	18	-	23	-	2.3	3.0	3.4	5	8.2	8.2	8.2	-	-	-	-
SUMMARY:	63	6.63	8.6	54	19	-	35	19	0.3	2.7*	3.9	26	4.2	12.2	32.0	-	-	-	65

LATE SUMMER TEMPERATURE / DISSOLVED OXYGEN PROFILES:

	SAMPLE DATE															
DEPTH	09/05/04		09/21/04		08/10/05		08/10/06		08/22/06		08/30/07		08/21/08		08/09/10	
m	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm	°C	ppm
0.0	22.2	7.6	18.0	8.0	27.5	9.5	25.8	7.5	24.3	8.0	24.1	8.5	22.9	7.6	26.8	7.6
1.0	22.1	7.5	18.0	8.0	26.7	9.5	24.3	7.4	23.7	8.0	23.7	8.4	22.4	7.6	24.4	7.8
2.0	21.8	7.1	17.9	7.9	25.4	8.5	24.1	7.1	23.4	7.7	23.5	8.1	21.8	7.4	24.1	7.6
3.0	21.5	6.4	17.8	7.8	21.8	3.3	23.4	5.3	21.8	6.1	22.0	6.5	21.5	7.4	23.9	7.3
4.0	21.0	3.6	17.8	7.7	16.3	0.5	19.3	0.2	20.6	2.4	20.8	4.7	20.4	3.5	22.1	2.1
5.0	19.5	0.1	17.7	7.5	13.1	0.4	15.7	0.2	17.5	1.1	19.3	1.7	19.3	0.4	17.8	0.3
6.0	18.3	0.1	17.5	7.4	11.8	0.4	14.3	0.2	14.8	1.0	17.0	1.2	17.5	0.3	16.1	0.2
7.0	-	-	-	-	-	-	-	-	13.6	0.8	-	-	-	-	-	-

WATER QUALITY SUMMARY

Duckpuddle Pond, Nobleboro
Midas: 5702, Basin: Primary 01

The Maine Department of Environmental Protection (Maine DEP) and the Volunteer Lake Monitoring Program (VLMP) have collaborated in the collection of lake data to evaluate water quality, track algal blooms, and determine historical water quality trends. This dataset does not include bacteria, mercury, or nutrients other than total phosphorus.

Water quality monitoring data for Duckpuddle Pond have been collected since 1976. During this period, 9 years of basic chemical information were collected in addition to 20 years of Secchi Disk Transparency (SDT) measures. In summary, the water quality of Duckpuddle Pond is considered below average based on measures of SDT, total phosphorus (TP), and chlorophyll-a (Chla). The potential for nuisance algal blooms on Duckpuddle Pond is high and were prevalent during the early through mid- 1990s.

Water Quality Measures: Duckpuddle Pond is a colored lake (average color 58 SPU) with an average SDT of 2.7 meters (8.9 feet). The range of upper water column TP for Duckpuddle Pond is 10 - 29 parts per billion (ppb) with an average of 19 ppb. Chla ranges from 4.2 - 17.9 ppb with an average of 10.1 ppb. Recent dissolved oxygen (DO) profiles show high DO depletion in deeper areas of the lake. The potential for phosphorus to leave the bottom sediments and become available to algae in the water column (internal loading) is high.

Comments: A Duckpuddle Pond watershed survey was conducted in 1995 through volunteer efforts in cooperation with Maine DEP. Results showed that phosphorus-laden runoff was entering the lake and its tributaries from several land uses, including State and town roads. Several farms in the upper watershed seemed to be major sources as well. Unlike most lakes in mid-coast Maine, existing development on the immediate shoreline is not intense and plays a lesser role than elsewhere. There are also many other minor erosion sites throughout the watershed whose cumulative impact cannot be dismissed.

Nutrient Management: A Duckpuddle Pond combined Phosphorus Control Action Plan (PCAP) and Total Maximum Daily (Annual Phosphorus) Load (TMDL) report has been drafted by Maine DEP during 2003-2005, with assistance from the Maine Association of Conservation Districts (MACD) project team. Following lake stakeholder and public reviews, as well as final US-Environmental Protection Agency review and approval, this document will serve as a basis for implementation of recommended best management practices to reduce TP loads from nonpoint pollution sources. Following EPA approval (early summer 2005), the final report, along with a EPA-New England review summary and letter of approval, will be on the Maine DEP webpage at: http://www.maine.gov/dep/blwq/docmonitoring/tmdl2.htm.

See ME-DEP Explanation of Lake Water Quality Monitoring Report for measured variable explanations. Additional lake information can be found on the Internet at http://www.lakesofmaine.org/ and/or http://www.maine.gov/dep/blwq/lake.htm, or telephone the ME-DEP at 207-287-3901 or the VLMP at 207-783-7733.

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Filename: 5702duck, revised: 04/2005, by dbh